

REMARKS

Applicants respectfully request that the above-identified patent application be reexamined and reconsidered.

Claims 1-15 are now pending in this application. In a second non-final Office Action dated April 9, 2003 (hereinafter "Office Action"), Claims 1-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Scott et al. (U.S. Patent No. 5,649,195) in view of Zollinger et al. (U.S. Patent No. 6,321,236 B1). Applicants have amended the present application to reinstate the claims that were canceled in the amendment filed on March 17, 2003. More specifically, applicants have added new Claims 24-31, which reinstate the formerly canceled Claims 16-23. Pursuant to 37 C.F.R. § 1.111, and for the reasons set forth below, applicants respectfully request reconsideration and allowance of this application.

Summaries of the Invention and Cited Reference

Prior to discussing in detail why applicants believe that all of the claims in the application are allowable, a brief description of applicants' invention and the cited references is provided. The following discussion of applicants' invention and the teachings of the applied references is not provided to define the scope or interpretation of any of applicants' claims. Instead, such discussed differences are provided to help the U.S. Patent and Trademark Office (hereinafter "the Office") better appreciate important claim distinctions discussed thereafter.

Summary of the Invention

The present invention is directed to a method, system, and computer product that employ an analysis of time relationships to reduce the amount of data transferred between computing devices during the synchronization of duplicate databases stored on a server and on a client. The present invention analyzes the time relationship of data stored in duplicate databases to determine the type of download that is to occur between the client and server. For example, the

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server downloads a database file to the client, if the last access time of the client database is earlier than the creation time of the server database. Alternatively, the server selectively downloads individual data objects from the server database to the client database, if the last access time of the client database is not earlier than the creation time of the server database. As described on page 3, lines 22-26, of applicants' specification, the method and system of the present invention allow users to access and manipulate data stored in duplicate databases while reducing the amount of data transferred during a database synchronization. The benefits of the invention are achieved by the utilization of the different types of download techniques described above.

Another aspect of the present invention provides a method for initializing duplicate databases. In one embodiment, the system deletes a server database if the server contains a database and if a received command dictates that the server database be deleted. In addition, the system copies a client database to the server database if a received command dictates that the database be copied. This method prepares duplicate databases for a synchronization process, such as the synchronization process described above.

Summary of Scott et al.

Scott et al. purportedly discloses a system and method for synchronizing databases. Scott et al., Col. 2, lines 20-24. More specifically, Scott et al. discloses a system and method for synchronizing databases in a receive-only, i.e., one-way communication, network without requiring transmission or retransmission of an entire master database to each remote site storing a replica database. *Id.* The method and system disclosed in Scott et al. does not employ an analysis of time relationships to initiate download or synchronization processes. Instead, the method disclosed in Scott et al. employs an analysis of a "next-sequence number" and a "next-broadcast number" to determine if a replica database should be updated by a master database. *Id.*

at Col. 3, lines 35-55, and Col. 4, lines 55-67. The next-sequence number and next-broadcast number are stored in a file that is separate from the any of the databases.

In one specific embodiment, Scott et al. discloses a method of selectively updating a replica database on a remote computer. During an update of the replica database, the remote computer receives a packet having a next-sequence number and a next-broadcast number. The next-broadcast number is compared with a "last-broadcast-number-received" that is maintained at the remote computer. If the received next-broadcast number is less than or equal to a last-broadcast-number-received, the received packet is ignored. If the received next-broadcast-number is greater than the last-broadcast-number-received, the received next-sequence number is compared with the last-broadcast-number-received. The replica database is updated with the received packet if the received next-sequence number is greater than the last-broadcast-number-received. Scott et al. focuses on a method for executing individual database updates, a method that does not disclose, teach, or suggest a method that utilizes one of two different types of download actions based on an examination of a time at which a server database is created.

Summary of Zollinger et al.

Zollinger et al. purportedly discloses a method for updating a database table on a client computer when changes are made to a database table on a server. Zollinger et al., Col. 3, lines 1-3. Each update is made by comparing a current copy of a database table with a reference copy of the same database table with the update being given a "version identifier," such as a sequential version number. *Id.*, Col. 3, lines 35-40. In one specific embodiment, Zollinger et al. discloses a method where the version identifier is a date or time stamp that may be directly compared with other date or time stamps to determine which updates are needed to make a database table current. *Id.*, Col. 11, lines 56-60. For example, a client may ask for all updates since a given date. *Id.*, Col. 11, lines 63-65. The server then compares the given date to a file creation date for the updates (if stored in a file) or other date and time stamp information in order

to assure the correct updates are used to make the client copy of the database table current. Id., Col. 11, line 65, through Col. 12, line 2. Zollinger et al. does not disclose, teach, or suggest a method that distinguishes between two different types of download actions based on an examination of a time at which a server database is created.

Rejection of Claims 1-15 Under 35 U.S.C. § 103(a)

The Office Action rejected Claims 1-15 under 35 U.S.C. § 103(a) as being unpatentable over Scott et al. in view of Zollinger et al. The Office Action asserts that the combination of Scott et al. and Zollinger et al. suggests each and every element of applicants' claims. Applicants respectfully disagree. As described in more detail below, the cited references fail to disclose or suggest any one of applicants' claim elements. In addition, Scott et al. and Zollinger et al. teach away from applicants' claimed invention.

Claim 1 reads as follows:

1. A method for dynamically synchronizing a duplicated database stored on a server and a client computer, wherein the client computer database comprises a last server access time and a plurality of data objects and the server computer database comprises a creation time and a plurality of data objects, comprising:

downloading the server computer database to the client computer, if the client computer database last server access time indicates a time that is earlier than a time indicated by the creation time of the server computer database;

selectively downloading data objects stored in the server computer database to the client computer database, if the client computer database last server access time indicates a time that is not earlier than a time indicated by the creation time of the server computer database;

receiving a command for determining a database configuration;

deleting the server computer database if the server computer contains a database and if the received command dictates that the server computer database be deleted; and

copying a client computer database to the server computer, if the received command dictates that the client computer database be copied to the server computer.

As distinctly defined in Claim 1 and described in the specification on page 3, line 24, to page 4, line 7, applicants' method synchronizes duplicate databases by either (1) downloading a database to a client computer, or (2) selectively downloading data objects stored in the server computer database to the client computer database. In brief, the server downloads an entire database if one condition is met, or selectively downloads individual objects if another condition is met. The type of download that is executed between the server and client is determined by a comparison between a "creation time" of the server database and an access time of the client database.

Conversely, Scott et al. discloses a database synchronization method that is based on the comparison of a number of update sequence numbers: a "next-sequence number," a "next-broadcast number" and a "last-broadcast-number-received." As summarized above, Scott et al. focuses on a database synchronization method that updates records of a database if the received next-broadcast-number is greater than the last-broadcast-number-received, and if the received next-sequence is greater than the last-broadcast-number-received. All methods disclosed in Scott et al. rely on comparisons of different sequence numbers to determine if a synchronization of an individual database modification should occur. Scott et al. specifically focuses on the synchronization of individual database modifications, not a combination of different download methods. More specifically, Scott et al. does not suggest, nor does it have any similar functions as, applicants' claimed invention which includes a synchronization of duplicate databases by either (1) "downloading a database to a client computer, if the client computer database last server access time indicates a time that is earlier than a time indicated by the creation time of the server computer database," or (2) "selectively downloading data objects stored in the server computer database to the client computer database, if the client computer database last server access time indicates a time that is not earlier than a time indicated by the creation time of the server computer database."

Applicants further submit that Scott et al. and Zollinger et al. fail to suggest any method having a combination of download actions, including the action of "downloading the server

computer database to the client computer." There is no teaching or suggestion in either reference of this action to be combined with any other download or synchronization procedure. In fact, Scott et al. and Zollinger et al. teach away from a database synchronization method that involves the transmission of a database. As noted above, Claim 1 includes an action of "downloading the server computer database to the client computer, if the client computer database last server access time indicates a time that is earlier than a time indicated by the creation time of the server computer database. . . ." (Emphasis added.) Conversely, Scott et al. specifically states that "[i]t is another object of the present invention to provide systems and methods for synchronizing databases in a receive-only network without requiring transmission or retransmission of an entire master database to each remote site." Scott et al., Col. 2, lines 27-31. (Emphasis added.) This statement, which is repeated throughout Scott et al., clearly indicates that Scott et al. does not teach, or even remotely suggest, combining the incremental update method disclosed in Scott et al. with a process of transmitting, i.e., downloading, a database. In addition, Zollinger et al. states that a download of a database is "expensive," "time consuming," and "impracticable." Zollinger et al., Col. 2, lines 5-12. Not only do Scott et al. and Zollinger et al. fail to disclose applicants' claimed combination of download two procedures, if anything these references teach the opposite. Both references teach away from combining the action of transmitting a database with other download or synchronization procedure.

The Office Action also asserts that Zollinger et al. discloses a synchronization method that is based on a time stamp comparison of a "client database updating time" with "another time stamp." Office Action, Page 4, lines 1-3. Although it is true that Zollinger et al. discloses a method that compares an update date with a file creation date "in order to assure the correct updates are used to make the client copy of the database table current," Zollinger et al. does not disclose, teach, or suggest applicants' claimed method that distinguishes between two different types of download actions based on an examination of a time at which a server database is created. Similar to Scott et al., Zollinger et al. examines one or more sequence numbers or dates

to determine if a record should be updated. Applicants respectfully submit that a method that compares dates to determine if a single update should be performed does not suggest the claimed combination of (1) "*downloading the server computer database to the client computer*, if the client computer database last server access time indicates a time that is earlier than a time indicated by the creation time of the server computer database," and (2) "*selectively downloading data objects stored in the server computer database to the client computer database*, if the client computer database last server access time indicates a time that is not earlier than a time indicated by the creation time of the server computer database." Thus, it is clear that Zollinger et al., alone or in combination with Scott et al., does not teach or even suggest a combination of one or more different types of download methods. At best, both references only teach methods of incrementally updating databases.

Applicants respectfully submit that the rejection is improper because Scott et al. and Zollinger et al., alone or in combination, do not disclose, teach, or suggest a method that examines a time at which a server database is created to a last server access time to determine if a synchronization method should include (1) downloading a database to a client computer, or (2) selectively downloading data objects stored in the server computer database to the client computer database. Simply put, neither of the cited references suggests, much less teaches, a method that utilizes two different types of download methods. Rather, as noted above, both Scott et al. and Zollinger et al. teach away from applicants' claimed invention.

As described above, the Office has failed to show, and applicants are unable to find, where Scott et al. or any other cited reference, alone or in combination, discloses or suggests the subject matter defined in Claim 1. At best, the cited references only disclose methods that are akin to synchronization procedures that involve incremental updates, *not* a method that involves two types of updates. Thus, for at least these reasons, applicants respectfully submit that the Office Action has not established a *prima facie* case of obviousness and respectfully request that the rejection of Claim 1 and the claims dependent therefrom be withdrawn.

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Since Claims 2-5 depend from Claim 1 and Claims 6 and 7 are computer-readable medium and apparatus claims having language that parallels the language of Claim 1, the analysis applied to Claim 1 also applies to these claims and their respective dependent claims. Therefore, applicants respectfully submit that Claims 2-7 are in condition for allowance for the same reasons as Claim 1. Further, applicants submit that the dependent claims are patentable for additional reasons. For instance, with respect to Claim 5, neither of the cited references, alone or in combination, disclose or suggest a method of "downloading the server computer database to the client computer, if the client computer database last server access time is not within a predetermined period of time from a clock time maintained by the server computer." As described in applicants' specification, the "predetermined time period" allows the system of the present invention to determine if a database has expired, e.g., where a given period of time has elapsed since the last access. None of the cited references even contemplate this benefit or a method that is similar to the method of Claim 5.

Applicants respectfully submit that Claims 8-15 are also in condition for allowance. Like Claim 1, Claim 8 defines a method of "downloading the server computer database to the client computer, if the client computer database last server access time indicates a time that is earlier than a time indicated by the creation of the server computer database" or "selectively downloading data objects stored in the server . . . if the client computer database last server access time indicates a time that is not earlier than a time indicated by the creation time of the server computer database." As stated above, the methods disclosed in Scott et al. and Zollinger et al., which involve individual updates upon the examination of sequence numbers or time stamps, do not suggest a method that utilizes two different types of downloads depending on the analysis of a creation time stamp. Thus, for at least these reasons, applicants submit that the rejection of Claim 8 and its dependent claims is in error and should be withdrawn.

With regard to Claim 24, applicants respectfully submit that this claimed method is not taught or suggested by the cited references. Claim 24 recites a method of "deleting the server

database if the server computer contains a database and if the command dictates that the server computer database be deleted; and copying a client computer database to the server computer, if the received command dictates that the client computer database be copied to the server computer. . . ." As stated above, Scott et al. and Zollinger et al. fail to suggest the use of any method that involves the transfer or transmission of a database, as the references both state that the transfer of a database should not to be combined with a synchronization method. Moreover, the cited references alone or in combination fail to suggest a method that involves "copying a client computer database to the server computer." Applicants note that all update methods disclosed in the cited references provide updates from the server computer to the client computer, not in the reverse order as recited in applicants' claim. Thus, all cited references fail to disclose a method that involves the transfer of any updates from a **client computer to a server computer**. Thus, for at least these reasons, applicants submit that Claim 24 and its dependent claims are in condition for allowance.

With regard to Claim 27, applicants respectfully submit that this claimed method is not taught or suggested by the cited references. Claim 27 recites a combination of actions including the actions of "updating the entire client computer database with the server computer database if the synchronization data includes the server computer database; and updating selective client computer database data objects, if the synchronization data only includes corresponding selective server data objects." As stated above, Scott et al. and Zollinger et al. do not disclose or suggest a combination of actions involving both (1) "updating the entire client computer database" and (2) "updating selective client computer database data objects." For at least this reason, in addition to the fact that the cited references teach away from applicants' claimed combination of update methods, applicants submit that Claim 27 and its dependent claims are in condition for allowance.

CONCLUSION

In view of the foregoing remarks, it is submitted that the present application is now in condition for allowance. Reconsideration and reexamination of the application, and allowance of the claims are solicited. If the Examiner has any questions or comments concerning this matter, the Examiner is invited to contact applicants' undersigned attorney at the number below.

Respectfully submitted,

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Date: June 26, 2003

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